

system 100. FIG. 1 is a side view illustrating the overall configuration of the tractor 1. FIG. 2 is a plan view of the tractor 1. FIG. 3 is a block diagram illustrating a main configuration of the control system of the autonomous travel system 100.

[0035] The tractor 1 illustrated in FIG. 1 is used in the autonomous travel system 100 and is operated by performing wireless communication with the wireless communication terminal 46. The tractor 1 includes a travel machine body (vehicle body part) 2 capable of autonomously traveling in the farm field. For example, a work machine 3 for performing agricultural work is detachably attached to the travel machine body 2.

[0036] As this work machine 3, for example, there are various work machines such as a tiller, plow, fertilizer applicator, mower, and seeder, and the work machine 3 selected from these is mounted on the travel machine body 2. In FIG. 1 and FIG. 2, an example in which a tiller is attached as the work machine 3 is illustrated. The tiller includes the tillage claw 3b arranged inside the cover 3a, and this tillage claw 3b rotates around the vehicle width direction as the rotation center, in order to till the farm field. Here, the width (length in the vehicle width direction) in which the work machine 3 performs the work is referred to as the work width W1, and the length in the vehicle width direction of the work machine 3 is referred to as the work machine width W2. In the tiller having the shape illustrated in FIG. 2, the width of the tillage claw 3b corresponds to the work width W1, and the width of the cover 3a corresponds to the work machine width W2. Since the tiller includes the tillage claw 3b arranged inside the cover 3a, the work width W1 is narrower than the work machine width W2. However, for example, in a case where a fertilizer applicator that sprays chemicals so that the chemicals are spread in the width direction is attached as the work machine 3, the work width W1 may be wider than the work machine width W2. In this way, which of the work width W1 and the work machine width W2 is wider differs, depending on the work machine 3 and the contents of the work. Further, the travel machine body 2 is capable of changing the height and posture of the mounted work machine 3.

[0037] With reference to FIG. 1 and FIG. 2, more detailed explanation is given of the configuration of the tractor 1. As illustrated in FIG. 1, regarding the travel machine body 2 of the tractor 1, the front part thereof is supported by the left and right pair of front wheels (wheels) 7 and 7 and the rear part thereof is supported by the left and right pair of rear wheels 8 and 8.

[0038] The bonnet 9 is arranged at the front part of the travel machine body 2. The engine 10, which is the drive source of the tractor 1, and a fuel tank (illustration omitted) are housed in this bonnet 9. For example, this engine 10 can be configured with a diesel engine, but this engine 10 is not limited as such and may be configured with a gasoline engine, for example. In addition, as the drive source, an electric motor may be used in addition to or instead of the engine.

[0039] The cabin 11 for the user to board is arranged behind the bonnet 9. Inside this cabin 11, the steering handle (steering tool) 12 for the user to perform steering, the seat 13 that the user can sit on, and various operation tools for performing various kinds of operations are mainly provided. However, the work vehicle such as the tractor 1 may or may not be provided with a cabin 11.

[0040] As illustrated in FIG. 2, the above-described operation tools include, for example, the monitor device 14, the throttle lever 15, the main transmission lever 27, the multiple hydraulic operation levers 16, the PTO switch 17, the PTO transmission lever 18, the sub transmission lever 19, the forward-reverse traveling switching lever 25, the parking brake 26, the work machine raising-lowering switch 28, etc. These operation devices are arranged in the vicinity of the seat 13 or in the vicinity of the steering handle 12.

[0041] The monitor device 14 is capable of displaying various kinds of information of the tractor 1. The throttle lever 15 is an operation tool for setting the rotation speed of the engine 10. The main transmission lever 27 is an operation tool for steplessly changing the traveling speed of the tractor 1. The hydraulic operation lever 16 is an operation tool for an operation of switching an illustration-omitted external hydraulic pressure take-out valve. The PTO switch 17 is an operation tool for switching between transmission and cut-off of power to an illustration-omitted PTO shaft (power take-off shaft), which protrudes from the rear end of the transmission 22. That is, when the PTO switch 17 is in the ON state, power is transmitted to the PTO shaft so that the PTO shaft rotates and the work machine 3 is driven whereas, when the PTO switch 17 is in the OFF state, the power to the PTO shaft is cut off so that the PTO shaft does not rotate and the work machine 3 is stopped. The PTO transmission lever 18 is for an operation of changing the power to be input to the work machine 3 and, specifically, is an operation tool for performing a transmission operation for the rotation speed of the PTO shaft. The sub transmission lever 19 is an operation tool for switching the gear ratio of a traveling sub transmission gear mechanism in the transmission 22. The forward-reverse traveling switching lever 25 is switchable among a forward-traveling position, a neutral position, and a reverse-traveling position. In a case where the forward-reverse traveling switching lever 25 is positioned in the forward-traveling position, the power of the engine 10 is transmitted to the rear wheels 8 so that the tractor 1 travels forward. In a case where the forward-reverse traveling switching lever 25 is positioned in the neutral position, the tractor 1 does not travel forward or backward. In a case where the forward-reverse traveling switching lever 25 is positioned in the reverse-traveling position, the power of the engine 10 is transmitted to the rear wheels 8 so that the tractor 1 travels backward. The parking brake (braking operation tool) 26 is an operation tool that is manually operated by the user to generate a braking force and, for example, is used in a case of stopping the tractor 1 for a while. The work machine raising-lowering switch 28 is an operation tool for an operation of raising and lowering the height of the work machine 3 mounted on the travel machine body 2 within a predetermined range.

[0042] As illustrated in FIG. 1, the chassis 20 of the tractor 1 is disposed at the lower part of the travel machine body 2. The chassis 20 is configured with the machine body frame 21, the transmission 22, the front axle 23, the rear axle 24, etc.

[0043] The machine body frame 21 is a support member at the front part of the tractor 1 and supports the engine 10 directly or via an anti-vibration member or the like. The transmission 22 transforms the power from the engine 10 and transmits the power to the front axle 23 and the rear axle 24. The front axle 23 transmits the power that is input from